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BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of	)	
	)	
Amendment of Part 90 of the Commission's Rules	)	WT Docket No. 01-146
and Policies for Applications and Licensing of Low	)	RM-9966
Power Operations in the Private Land Mobile	)	
Radio 450-470 MHz Band	)	

To: The Commission

COMMENTS OF TRIMBLE NAVIGATION LIMITED

Trimble Navigation Limited ("Trimble"), by its attorneys and pursuant to Sections 1.415 and 1.419 of the Commission's rules, 47 C.F.R. §§ 1.415 and 1.419, hereby comments on the above-captioned rulemaking proceeding concerning low power operations in the private land mobile radio ("PLMR") 450-470 MHz band.[1] Although Trimble generally supports the Land Mobile Communications Council's ("LMCC") consensus plan that forms the basis of the NPRM, it believes that additional non-voice operations must be allocated to the 450-470 MHz band in order to satisfy the spectrum needs of the nation's data user community.

The demand for low power non-voice communications is rapidly growing across all segments of the U.S. economy, including in the business, medical, educational and government sectors, as the transmission of data becomes an increasingly vital component of the daily operations of entities licensed in the Industrial/Business and Public Safety Pools. This growth in

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[1] Amendment of Part 90 of the Commission's Rules and Policies for Applications and Licensing of Low Power Operations in the Private Land Mobile Radio 450-470 MHz Band, *Notice of Proposed Rule Making*, WT Docket No. 01-146; RM-9966 (released July 24, 2001) ("NPRM").

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demand notwithstanding, the LMCC consensus plan and the NPRM exhibit a clear bias in favor of voice communications when assigning channels to the four proposed groups of channels. Trimble believes that the division of channels needs to reflect a more equitable allocation of spectrum that accounts for the rapid growth in data communications. To this end, Trimble proposes that the Commission designate the new Group B channels as "data only," and to open up these channels to all data users, whether in the public or private sector. In addition, Trimble urges the Commission to permit non-voice data operations on a secondary basis in the new Group A and Group C channels. [2]

I. Introduction

Trimble, a U.S. corporation, is a leader in the development of technology-based products that employ the Global Positioning Satellite System ("GPS"), a constellation of satellites operated by the U.S. Government that provide position and time information to users worldwide. Signals transmitted from the GPS satellites to terrestrial, aeronautical or maritime receivers enable users to determine the unique address of any point on Earth or to "time tag" any event. The most precise GPS receivers can compute to an accuracy of one to two centimeters using a surveying technique that takes measurements at a fixed reference station and transmits them via a wireless data link to itinerant mobile receivers. When these non-voice data transmissions are combined with communications devices and computers, a broad range of applications, including surveying, asset management and telecommunications infrastructure, are possible with a degree of accuracy and speed unavailable from any other technology.

Given the data-dependent nature of precision GPS systems, Trimble has a keen interest in the issues raised in the instant proceeding. In particular, Trimble is concerned that the proposals

[2] Trimble observes that, as voice-dependent PLMR licensees acquire more sophisticated digital equipment, the line separating voice communications from data communications will be blurred. This fact further supports the designation of additional spectrum for data communications.

advanced by the LMCC in its consensus plan, and by the Commission in the NPRM, underestimate the spectrum needs of data users licensed in the 450-470 MHz band. The existing shortage of data spectrum has significant public interest consequences, given the numerous safety functions that the data user community provides on a daily basis. Numerous public sector entities, for example, require ready access to spectrum for a broad range of public safety applications using GPS systems, including disaster management and recovery operations, police, fire, and medical emergency response, and infrastructure construction and maintenance. The private sector, too, relies on GPS systems for the provision of public safety services, such as the guidance and control of earth-moving equipment and cutting machines by the construction industry to avoid severing buried pipeline or utility conduits, and the precise positioning of extraction equipment by the mining industry to minimize hazardous working conditions in mines.

In light of the many public safety applications that depend upon data communications, Trimble urges the Commission to use the opportunity of this proceeding to increase the amount of spectrum at 450-470 MHz designated for non-voice operations. In the comments that follow, Trimble proposes several means to achieve that goal.

II. Non-Voice Spectrum Users Require A "Data Only" Group Of Channels That Are Available To Both Industrial/Business and Public Safety Pool Licensees.

A. The Group B Channels Should Be Set Aside Exclusively For Data Transmissions.

As an initial matter, Trimble strongly supports the proposal to designate the Group B channels for low power non-voice, coordinated use.[3] The LMCC correctly observed that non-voice operations warrant their own group of channels because of the risks to safety that could

[3] See NPRM at ¶ 19.

result if these channels were shared with voice operations.[4] To affect this proposal, the Commission should, consistent with its tentative conclusion, remove the Group B frequencies from those subject to the Part 90 rule provision that designates telemetry operations as secondary.[5] In addition, Group B licensing should be made on an individual rather than on a channel pair basis.[6] Modern telemetry transceivers are proven capable of operating on a single frequency. By providing for a pool of 20 channels rather than the proposed 10 channel pairs, the Commission would promote spectrum efficiency by effectively doubling the number of allowable users of the Group B channels.

While it agrees with the LMCC proposal to set aside non-voice frequencies in Group B, Trimble disagrees with LMCC on the extent to which those data operations should be protected. The LMCC consensus plan would allow voice operations on the Group B data channels on a secondary, non-interfering basis – in effect, designating the frequencies as "data primary" rather than "data only."[7] The considerations that prompted LMCC to establish the Group B channels in the first place require that *all* voice operations be barred from these frequencies. Therefore, Trimble urges the Commission to reserve the Group B channels for "data only" operations. Consistent with this position, Trimble also recommends that continuous data transmissions – rather than a specified duty cycle – be allowed on these channels.[8]

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4 See NPRM at ¶ 19.

5 See id.

6 See id. at ¶ 31.

7 See id. at ¶ 20.

8 See id. at ¶ 19.

B. The "Data Only" Group B Channels Should Be Open To Public Safety Pool Licensees.

The LMCC consensus plan and the NPRM focus on how the low power Industrial/Business Pool channels can be divided into groups with different technical and coordination requirements.[9] No mention is made, however, on whether circumstances exist that also favor making these channels available to other PLMR licensees. This issue should form part of the Commission's 450-470 MHz inquiry because the chronic shortage of spectrum currently available for public safety applications has direct consequences on Industrial/Business Pool operations.

On this point, Trimble believes that the Commission should open up the "data only" Group B channels to both Industrial/Business Pool and Public Safety Pool data users. The need for a more flexible licensing scheme for the Group B channels is evident in light of the comparatively small number of channels assigned to the Public Safety Pool and the restriction on governmental licensees in the Industry/Business Pool. This combination of factors has, for example, left an estimated 70 percent of state and local government users unable to access Public Safety Pool channels for GPS operations and has caused them to seek spectrum elsewhere through partnerships with private sector entities – a process that has resulted in growing congestion in the Industrial/Business Pool. Opening up the Group B channels to all data users would go a long way towards easing the spectrum shortage facing the public sector.

III. The Commission Should Authorize Non-Voice Operations On A Secondary Basis In Group A And Group C.

The Commission requests comment on whether non-voice operations should be limited to the new Group B channels or whether such operations should be authorized on a secondary basis

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[9] See NPRM at ¶ 7.

to voice in the new Group A and Group C channels.[10] Trimble supports secondary data operations in both channel groups.

As proposed by the LMCC, the Group A channels represent more than half of the 90 Industrial/Business Pool channels in the 450-470 MHz band. Trimble maintains that this predominate share of spectrum, which is intended for the most powerful of the low power PLMR services, should not be the exclusive domain of voice operations. Instead, secondary non-voice operations should be allowed there as well – and at the same power levels accorded to voice users. Secondary non-voice operations are feasible because modern data receivers have automatic detection and "polite" operational functions. In addition, power limits could be lessened outside of urban areas (on both voice and non-voice users) to a maximum of 100 watts. Operations in excess of this power limit (e.g., up to 500 watts as currently permitted under the Commission's rules) would severely limit frequency re-use in the Group A channels. Trimble, however, would not be opposed to Group A operations in excess of 100 watts outside of urban areas so long as such operations are subject to automatic power control ("APC").[11]

For the Group C channels, the LMCC proposes to designate 25 channels pairs for low power non-coordinated, itinerant use.[12] Because of the perceived difficulties in implementing secondary data operations in an itinerant service, the Commission seeks comment on whether the secondary telemetry operations currently permitted in most of the Group C channels should be prohibited.[13] Trimble opposes the blanket prohibition on Group C data operations as inconsistent with the Commission's stated goal of using the Group C channels to provide low

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10 See NPRM at ¶ 30

11 On the other hand, an APC requirement is not necessary for, and should not be applied to, Group A operations of 100 watts or less.

12 See id. at ¶ 21.

13 See id. at ¶ 24.

power users with the "needed flexibility" to establish short-term communications systems.[14] Itinerant users often require voice and data communications simultaneously, as in the case of construction work crews on a job site employing GPS systems for machine control applications. Thus, far from promoting flexibility, eliminating secondary telemetry operations will in fact inhibit it. The proposed Group C data restriction is also unnecessary technically because, as a secondary service, non-voice operations can employ carrier detection and cease data transmissions when a voice user occupies a channel.

IV. Conclusion

For the foregoing reasons, Trimble urges the Commission to adopt the LMCC consensus plan for the 450-470 MHz band consistent with the proposals for additional spectrum for data communications offered in these comments.

Respectfully submitted,

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[14] See NPRM at ¶ 26.